Air Resources Board

Robert F. Sawyer, Ph.D., Chair
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Dan Skopec
Acting Secretary

Arnold Schwarzenegger
Governor

April 12, 2006

Mr. Michael Lessley
Triangle Environmental, Incorporated
730 North Mariposa Street
Burbank, California 91506-1629

Dear Mr. Lessley:

We have completed our engineering evaluation of the TriTester Version 2.01 for equivalency with Exhibit 5 of Executive Orders (EOs) VR-201-A and VR-202-A. Exhibit 5 is an Air Resources Board (ARB) test procedure to measure vapor to liquid (V/L) ratio for Healy Phase II Enhanced Vapor Recovery (EVR) systems.

The TriTester is a self-sustaining, battery operated digital V/L tester that utilizes a modified Dresser Measurement Roots Meter with a built in correction factor. In 2004, ARB approved the TriTester Version 2.96 as equivalent to the 1996 version of ARB method TP-201.5, Air to Liquid Volume Ratio. The TriTester Version 2.01 is a software upgraded version that requires dispensing two gallons of fuel instead of the three gallons as required in Version 2.96. The TriTester can be configured with Version 2.01, 2.96 or both.

As specified by Section 14 of CP-201, Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities, the United States Environmental Protection Agency's (US EPA) Method 301 was used to determine equivalency between the TriTester Version 2.01 and Exhibit 5. Based on the results described in the enclosed summary, we approve the TriTester Version 2.01 instrument and procedure as equivalent to Exhibit 5 of EO VR-201 series and VR-202 series. This approval is applicable when testing is conducted as specified in the operating manual.

Thank you for your patience and assistance in conducting the US EPA Method 301 equivalency testing of the TriTester. If you have questions or need further information, please contact either Sam Vogt at (916) 322-8922 or via email at svogt@arb.ca.gov, or Joe Guerrero at (916) 324-9487 or via email at jguerrer@arb.ca.gov.

Sincerely,

William V. Loscutoff, Chief
Monitoring and Laboratory Division

Enclosure

cc: See next page

cc: Brian Auger
San Luis Obispo Air Pollution Control District

Jim Swaney
San Joaquin Valley Air Pollution Control District

Jeannette Lim
Bay Area Management Air Quality Management District

Paul Bauer
Healy Systems, Inc.

Summary of Statistical Analysis Comparing the Triangle TriTester Version 2.01 to Air Resources Board's Exhibit 5 from Executive Order VR-201-A April 12, 2006

The United States Environmental Protection Agency's (US EPA) Method 301 is used for statistically evaluating equivalency between the reference method, Exhibit 5 (referenced in Executive Orders VR-201-A and VR-202-A) and the proposed TriTester Version 2.01. US EPA Method 301 evaluation consists of bias and precision calculations applied to nine pairs of data obtained from field vapor to liquid (V/L) testing. All testing was conducted with a Healy Phase II EVR system installed at a gasoline dispensing facility located at 8900 Pocket Road, Sacramento, California. Pre and post leak tests were performed on both test methods to ensure leak free for data validation. A proposed method is deemed equivalent to an adopted method, when the proposed method:

1. **a) Passes the t-test ($t \leq 1.397$) or**
   b) If it fails the t-test, have a correction factor (CF) in the range of 1.0 ± 0.1
2. **Passes the F-test where the $F \leq 3.44$**

Note: The data set "n" must be equal to nine.

The table below Method 301 statistical data performed on January 26, 2006 to demonstrate equivalency:

Data Sets (n)	Exhibit 5 Method V/L	TriTester Method V/L	Difference Between Methods	Average Difference (d_m)	Standard Deviation (SD_d)	t-statistic test value (t)	(CF)	F- test (F)	Equivalent
1	0.96	1.02	-0.06	-0.026	0.035	0.248	Not Required	0.276	Yes
2	1.04	1.02	0.02						
3	1.00	1.01	-0.01						
4	1.03	1.04	-0.01						
5	0.95	1.03	-0.08						
6	0.98	1.02	-0.04						
7	0.99	1.00	-0.01						
8	1.00	1.06	-0.06						
9	1.03	1.01	0.02						

Three subsequent tests were conducted after the above test for verification purposes. All data sets were determined equivalent using Method 301.